

State of New Hampshire  
Division of Plant and Property Management  
Bureau of Purchase and Property  
25 Capitol Street, State House Annex  
Concord, NH 03301-6398

Date: 6/11/ 2004

Bid No.: 461

Date of Bid Opening: 6/21/ 2004

Time of Bid Opening: 1:30 pm

PLEASE DIRECT ANY QUESTIONS REGARDING THIS BID TO: MICHAEL P. WALSH II, PURCHASING AGENT/  
TEL. NO: (603) 271-3235 - FAX No. (603) 271-2700

**BID INVITATION FOR: GENERATOR & TRANSFER SWITCH SUPPLY & START UP**

Unless specifically amended or deleted by the Division of Plant and Property Management, the following General Terms and Conditions apply to this Bid and any resulting Purchase Order or Contract.

**GENERAL CONDITIONS AND INSTRUCTIONS:**

**NATURE OF, AND ELIGIBILITY TO RESPOND.** This bid invitation is submitted in accordance with Chapter 21-1, and rules promulgated thereunder, and constitutes a firm and binding offer. A bid may not be withdrawn unless permission is obtained from the Bureau of Purchase and Property.

Bids may be issued only by the Bureau of Purchase and Property and are not transferable.

**SAMPLES AND DEMONSTRATIONS.** When samples are required they must be submitted free of costs and will not be returned.

Items left for demonstration or evaluation purposes shall be delivered and installed free of charge and shall be removed at no cost to the State. Demonstration units shall not be offered to the State as new equipment.

**Bids.** Bids must be received at the Bureau of Purchase and Property before the date and time specified for the opening. Bids must be submitted on this bid form or exact copies and must be typed or clearly printed in ink. Corrections must be initialed. Bids are to be made less Federal Excise Tax and no charge for handling unless required by law.

Bids will be made available to the public after the time of award. Bid results will be given by mail only if requested in writing and accompanied by a self-addressed, stamped business size envelope.

**SPECIFICATIONS.** Bidders must submit on items as specified. Proposed changes must be submitted in writing and received at the Bureau of Purchase and Property at least five (5) working days prior to the bid opening. Bidders shall be notified in writing if any changes to the specifications are made.

**AWARD.** The award will be made to the responsible Bidder submitting a conforming RFB meeting specifications at the lowest cost unless other criteria are noted in the RFB. Unless otherwise noted, the award may be made by individual items.

If there is a discrepancy between the unit price and the extension, the unit price will prevail.

When identical low bids are received the award will be made in accordance with the Administrative Rules.

Discounts will not be considered in making award but may be offered on the Invoice for earlier payment and will be applicable on the date of completion of delivery or receipt of Invoice, whichever is later. On orders specifying split deliveries, discounts will apply on the basis of each delivery or receipt of Invoice, whichever is later.

**PATENT INFRINGEMENT.** Any responding bidder who has reason to believe that any other responding bidder will violate a patent should such responding bidder be awarded the contract shall set forth in writing, prior to the date and time of opening, the grounds for his belief and a detailed description of the patent.

**ASSIGNMENT PROVISION.** The responding bidder hereby agrees to assign all causes of action that it may acquire under the antitrust laws of New Hampshire and the United States as the result of conspiracies, combinations, or contracts in restraint of trade which materially affect the price of goods or services obtained by the state under this contract if so requested by the State of New Hampshire.

**FEDERAL FUNDS.** This Division of Plant and Property Management, under RSA 21-1:14, VIII shall assure the continuation or granting of federal funds or other assistance not otherwise provided for by law by following the Federal Procurement Standards.

**STATE'S OPTIONS:** The Bureau of Purchase and Property reserves the right to reject or accept all or any part of any bid, to determine what constitutes a conforming bid, to award the bid solely as it deems to be in the best interest of the State, and to waive irregularities that it considers not material to the bid.

**PUBLIC INFORMATION:** The responding bidder hereby acknowledges that all information relating to this bid and any resulting order (Including but not limited to fees, contracts, agreements and prices) are subject to these laws of the State of New Hampshire regarding public information.

**PERSONAL LIABILITY:** The responding bidder agrees that in the preparation of this bid or the execution of any resulting contract or order, representatives of the State of New Hampshire shall incur no liability of any kind.

**PROOF OF COMPLIANCE.** The responding bidder may be required to supply proof of compliance with proposal specifications. When requested, the responding bidder must immediately supply the Bureau of Purchase and Property with certified test results or certificates of compliance. Where none are available, the State may require independent laboratory testing. All costs for such testing certified test results or certificate of compliance shall be the responsibility of the responding bidder.

**FORM OF CONTRACT.** The terms and conditions set forth in any additional Terms and Conditions by the Bureau of Purchase and Property are part of the bid and will apply to any contract awarded the responding bidder unless specific exceptions are taken and accepted and will prevail over any contrary provisions in Terms and Conditions submitted by the responding bidder.

**OFFER.** The undersigned hereby offers to sell to the State of New Hampshire the commodities or services indicated in the following page(s) of this Bid at the price(s) quoted in complete accordance with all conditions of this Bid.

**Company Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Tel.:(local)** \_\_\_\_\_ **(Toll free)** \_\_\_\_\_

**Fax#:** \_\_\_\_\_

**Authorized Signature:** \_\_\_\_\_

\_\_\_\_\_  
**(TYPE OR PRINT NAME)**

This document must be signed by a person who is authorized to legally obligate the responding bidder. A signature on this document indicates that all State of New Hampshire terms and conditions are accepted by the responding bidder and that any and all other terms and conditions submitted by the responding bidder are null and void, even if such terms and conditions have terminology to the contrary. The responding bidder shall also be subject to State of New Hampshire terms and conditions as stated on the reverse of the purchase order.

## CONTRACT TERMS AND CONDITIONS

**1.** The State of New Hampshire, acting through the Division of Plant and Property Management, engages the firm or individual ("the Bidder") to perform the services and/or sale of goods, described in the attached State documents, if any, and the Bidder's bid or quotation, both of which are incorporated herein by reference.

**2. COMPLIANCE BY BIDDER WITH LAWS AND REGULATIONS.** In connection with the performance of this agreement, the Bidder shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which shall impose any obligation or duty upon the Bidder, including, but not limited to civil rights and equal opportunity laws.

**3. TERM.** The contract, and all obligations of the parties thereunder, shall become effective on a specified date and shall be completed in their entirety prior to a specified date. Any work undertaken by the Bidder prior to the effective date shall be at his sole risk and, in the event that the contract shall not become effective, the State shall be under no obligation to reimburse the Bidder for any such work.

**4. CONTRACT PRICE.** The contract price, a payment schedule and a maximum limitation of price shall be as specified by the bid invitation and the Bidder's bid. All payments shall be conditioned upon receipt, and approval by the State, of appropriate vouchers and upon satisfactory performance by the Bidder, as determined by the State. The payment by the State of the Contract Price shall constitute complete reimbursement to the Bidder for all expenses of any nature incurred by the Bidder in the performance by the Bidder and complete payment for the Services. The State shall have no other liability to the Bidder.

**5. DELIVERY.** If the bidder fails to furnish items and/or services in accordance with all requirements, including delivery, the state may re-purchase similar items from any other source without competitive bidding, and the original bidder may be liable to the state for any excess costs.

If a bidder is unable to complete delivery by the date specified, he must contact the using agency. However, the agency is not required to accept a delay to the original delivery date. All deliveries are subject to inspection and receiving procedure rules as established by the State of New Hampshire. Deliveries are not considered accepted until compliance with these rules has been established. State personnel signatures on shipping documents shall signify only the receipt of shipments. All deliveries shall be FOB Destination.

**6. INVOICING.** All invoices must be in triplicate showing Order Number, Unit and Extension Prices and discounts allowed. A separate invoice shall be submitted for each order. Unless otherwise noted on the invitation to bid or purchase order, payment will not be due until thirty (30) days after all services have been completed, or all items have been delivered, inspected and accepted or the invoice has been received at the agency business office, whichever is later.

### **7. PERSONNEL.**

**7.1.** The Bidder shall disclose in writing the names of all owners (5% or more), directors, officers, employees, agents or subcontractors who are also officials or employees of the State of New Hampshire. Any change in this information shall be reported in writing within fifteen (15) days of their occurrence.

**7.2.** The person signing this agreement on behalf of the State, or his or her delegee ("Contracting Officer") shall be the State's representative for purposes of this agreement. In the event of any dispute concerning the interpretation of this agreement, the Contracting Officer's decision shall be final.

### **8. EVENT OF DEFAULT; REMEDIES.**

**8.1.** Any one or more of the following acts or omissions of the Bidder shall constitute an event of default hereunder ("Events of Default"):

**8.1.1.** failure to deliver the goods or services satisfactorily or on schedule; or

**8.1.2.** failure to submit any report required hereunder; or

**8.1.3.** failure to perform any of the other covenants and conditions of this agreement.

**8.2.** Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

**8.2.1.** give the Bidder a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this agreement, effective two (2) days after giving the Bidder notice of termination; and

**8.2.2.** give the Bidder a written notice specifying the Event of Default and suspending all payments to be made under this agreement and ordering that the portion of the Contract Price, which would otherwise accrue to the Bidder during the period from the date of such notice until such time as the State determines that the Bidder has cured the Event of Default, shall never be paid to the Bidder; and

**8.2.3.** set off against any other obligation the State may owe to the Bidder any damages the State suffers by reason of any Event of Default; and

**8.2.4.** treat the agreement as breached and pursue any of its remedies at law or in equity, or both.

**9. WAIVER OF BREACH.** No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event, or any subsequent Event. No express failure of any Event of Default shall be deemed a waiver of any provision hereof. No such failure or waiver shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other default on the part of the Bidder.

**10. BIDDER'S RELATION TO THE STATE.** In the performance of this agreement the Bidder is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Bidder nor any of its officers, employees, agents or members shall have authority to bind the State nor are they entitled to any of the benefits, workmen's compensation or emoluments provided by the State to its employees.

**11. ASSIGNMENT AND SUBCONTRACTS.** The Bidder shall not assign, or otherwise transfer any interest in this agreement without the prior written consent of the State. No work required by this contract shall be subcontracted without the prior written consent of the State.

**12. INDEMNIFICATION.** The contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based on, resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Bidder. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive the termination of this agreement.

**12.1 PATENT PROTECTION.** The seller agrees to indemnify and defend the State of New Hampshire from all claims and losses resulting from alleged and actual patent infringements and further agrees to hold the State of New Hampshire harmless from any liability arising under RSA 382-A:2-312(3). (Uniform Commercial Code).

**13. TOXIC SUBSTANCES.** In compliance with RSA 277-A known as the Workers Right to Know Act, the bidder shall provide Material Safety Data Sheets with the delivery of any and all products covered by said law.

**14. NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given below.

**15. AMENDMENT.** This agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto.

**16. CONSTRUCTION OF AGREEMENT AND TERMS.** This agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns.

**17. ADDITIONAL PROVISIONS.** The additional provisions (if any) have been set forth as Exhibit "A" hereto.

**18. ENTIRE AGREEMENT.** This agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire agreement and understanding between the parties, and supersedes all prior agreements and understandings relating hereto.

## **BID INVITATION FOR: GENERATOR & TRANSFER SWITCH, SUPPLY & START UP**

### **PURPOSE:**

The purpose of this bid invitation is to establish a contract in the form of a purchase order for supplying the State of New Hampshire, Department of Fish & Game with a *BACK-UP GENERATOR*, in accordance with the requirements of this bid invitation and any resulting order. These items shall be a one-time order with delivery required to the location indicated in the F.O.B. section of this bid invitation.

### **BIDDER CERTIFICATIONS**

All bidders must be duly registered as a bidder authorized to conduct business in the State of New Hampshire.

- **STATE OF NEW HAMPSHIRE BIDDER APPLICATION.**

Bidders must have a completed Bidder Application and W-9 Form on file with the NH Bureau of Purchase and Property. See the following website for information on obtaining and filing the required forms (no fee):

<http://www.admin.state.nh.us/purchasing>

- **NEW HAMPSHIRE SECRETARY OF STATE REGISTRATION**

A person or persons conducting business under any name other than his/her own legal name must register with the NH Secretary of State. Businesses are classified as 'Domestic' (in-state) or 'foreign' (out-of-state). Please visit the following website to find out more about the requirements and filing fees for both classifications: <http://www.state.nh.us/sos/corporate>

### **SPECIFICATION COMPLIANCE:**

The manufacturer and / or models indicated are representative of the type and quality required. You may bid different makes and models; however, your offer must be materially similar to the one indicated.

If there are any specifications indicated in this bid invitation, they will be considered the minimum requirements. Bidder's offer MUST meet or exceed these minimum requirements.

### **SPECIFICATION - GENERATOR:**

The generator is required to include or be of **all** of the following:

- 30 KW RATED STANDBY GENERATOR
- 120/ 208 THREE PHASE FOUR WIRE OPERATION
- UNIT MOUNTED RADIATOR
- 100 AMP AUTOMATIC TRANSFER SWITCH -TO BE USED IN CONJUNCTION WITH ABOVE STATED GENERATOR
- GENERATOR ON SITE START-UP PROCESS
- ONE (1) EA. OPERATION AND PARTS/ MAINTENANCE MANUAL
- UNIT MOUNTED MAIN CIRCUIT BREAKER, 90 AMP RATED MINIMUM
- LP FUEL OPERATION
- JACKET WATER HEATER, MOUNTED
- STAINLESS STEEL FLEXIBLE EXHAUST CONNECTOR TO REACH FROM GENERATOR TO SILENCER
- ENGINE ANTIFREEZE RATED FOR -30F
- CRITICAL GRADE SILENCER
- LIQUID COOLED ENGINE, 4 CYCLE, 3600 RPM, 60 HERTZ
- STEEL BASE W/ RUBBER VIBRATION ISOLATORS
- VIBRATION ISOLATED CONTROL PANEL W/ DIGITAL INSTRUMENTATION
- LEAD ACID BATTERY SET, CABLES, RACK, MOUNTED
- AUTO FLOAT/ EQUALIZE UL LISTED BATTERY CHARGER, MINIMUM OUTPUT IS 3 AMPS, MOUNTED
- GENERATOR TO BE DELIVERED WITH INITIAL FILL OF LUBRICATING OIL AND ANTIFREEZE
- ELECTRONIC GOVERNOR WITH PERFORMANCE NOT TO EXCEED ¼% FREQUENCY REGULATION
- BLOCK HEATER
- CERTIFICATION PER NFPA 110 COMPLIANCE
- OVERALL SKID DIMENSIONS WILL NOT EXCEED 60" LONG X 35" WIDE X 42" TALL

### **SPECIFICATION, SUPPORT DOCUMENTATION:**

Copies of all available specified components for the indicative generator model referenced have been enclosed for the bidders review, see attached.

### **SPECIFICATION, PACKAGING:**

Generator unit will be packaged and crated during transport for protection and so it may be loaded /unloaded with forklift type equipment. Unloading is the responsibility of the bidder.

**AWARD:**

The bid award will be made in total to one bidder offering the **lowest total price** that meets or exceeds all specifications and requirements as specified.

**SCOPE OF WORK:**

The final placement, physical and electrical installation as well as fuel connection to the generator will be the responsibility of the NH Department of Fish & Game personnel. Electricians licensed and certified by the State of New Hampshire will install the generator. The bidder may review the electrical and fuel connections prior to start up to confirm they are within manufactures guidelines and specifications to maintain the warranty as stated.

**SPECIFICATION, START-UP:**

The generator will be shipped to the F.O.B destination indicated in this bid. Scheduling of start-up will occur within **15 calendar days (weather permitting)** after the generator unit has been delivered and will commence on a date mutually agreed upon by the NH Department of Fish & Game and the bidder.

Bidder shall incur all expenses associated with start-up responsibilities to include travel, lodging and any other expenses.

The successful bidder will be responsible to perform the initial start up, performance testing and user training of the generator. This process will allow the bidder to test the equipment and communicate proper procedure for operation and maintenance. Upon successful completion of start-up, the procedure would proceed to acceptance stage and thus begin the warranty period for that particular unit.

David Riel will be representing the Department of Fish & Game as a contact for scheduling generator start-up, testing and acceptance of the unit into ownership to the State of New Hampshire, TEL #603-764-8593.

**ACCEPTANCE:**

Equipment shall be accepted by the State after satisfactory completion of the manufacturers recommended start up procedure. This procedure will include a check for proper equipment operation and that equipment performance meets the manufacturing specification to include a **resistive load bank test at 100% of KW rating (minimum test time is 4 hrs)**. A standardized start-up checklist may be used for documentation and will be signed and dated by an agent of the State and bidder upon successful start-up test.

**WARRANTY:**

Successful bidder shall be required to warranty all of the equipment awarded for a period of **two (2) years, (NO LIMITATION ON RUN HOURS)** from the date the equipment is inspected, startup, testing and training is completed and the unit is accepted by the State of New Hampshire. The Warranty shall cover 100% of parts, labor, travel and expenses. **Please include a written copy of the manufacturer warranty with the bid offer.**

**SPECIFICATIONS –SALES REPRESENTATION & SERVICE:**

- Bidder making an offer must be a **factory authorized agent** to sell, service and repair the system being offered to include a complete line of repair and maintenance parts.
- A manufacturer's representative who has permanent representation in the New England region shall perform warranty and post-warranty service at the F.O.B location of the system offered within **24 hours** of notification. Name and contact information of servicing agent shall be provided upon delivery of equipment.

**PAYMENT SCHEDULE:**

After successful start-up, testing and acceptance of a generator unit, the bidder may invoice and payment will be made in full per the Terms and Conditions accompanying this bid.

**BID PRICES:**

Bid prices shall include delivery and all other costs. Bid prices should be government and/or educationally discounted prices.

**F.O.B.:**

The F.O.B. shall be destination to the following delivery point:

**NH DEPARTMENT OF FISH & GAME  
WARREN FISH HATCHERY  
OLD ROUTE 25  
WARREN NH 03279**

**REQUISITION NO.:** # 204518

**OFFER:**

Successful bidder hereby offers to sell the required items to the State of New Hampshire at the following price(s):

**The unit prices and extensions indicated should be government and/or educationally discounted prices.**

<u>QTY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>	<u>DELIVERED PRICES</u>
			<u>UNIT</u>
1	EA.	30 KW STAND BY GENERATOR (PER SPECIFICATIONS LISTED WITHIN)	\$ _____

**KOHLER MODEL# 30RYG, TO INCLUDE: #ADC 2100 DIGITAL CONTROL PANEL IS REPRESENTATIVE OF THE TYPE AND QUALITY REQUIRED (Review enclosed spec. sheets)**

The manufacturer and product number of your offer for this item is:

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**IF QUOTING OTHER THAN INDICATIVE MODEL, COMPLETE, DETAILED SPECIFICATIONS MUST ACCOMPANY BID TO BE CONSIDERED.**

Please list make and model offered for specified **transfer switch:**

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**COMPLETE, DETAILED SPECIFICATIONS OF OFFER MUST ACCOMPANY BID TO BE CONSIDERED.**

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**DELIVERY TIME:**

Successful bidder hereby agrees to accomplish delivery of any item awarded within \_\_\_\_\_ days after receipt of the order.

- Transfer switch will be shipped to FOB destination within 2 weeks of receipt of purchase order to allow for installation prior to receiving generator set.
- Bidder will make arrangements with trucking/ delivery firm to contact David Riel @ Tel # 603-764-8593, 48 hours prior to delivery of the generator set. Upon delivery, off loading of generator is the responsibility of **NH FISH + GAME**.

**NOTE TO BIDDERS:**

Any request for bid clarification or specification change must be received in writing at the Bureau of Purchase and Property before 4 pm on 6/16/2004 to be considered. This will allow time to review request and reply to bidders with adequate time prior to the scheduled bid opening.

**REQUEST CAN BE FAXED TO: 603-271-2700 ATTN: MICHAEL WALSH, OR E-MAILED TO: mwals@admin.state.nh.us**

**BIDDER OFFER FORMAT:**

THIS BID # 461 MAY HAVE BEEN DELIVERED TO YOU IN A FACSIMILE OR WEB BASED FORMAT. **BIDDERS MUST RETURN THEIR SIGNED HARD COPY OFFERS OR COMPLETE FAX COPIES TO THE BUREAU OF PURCHASE AND PROPERTY BEFORE 1:30 PM ON 6/21/2004.**

**FAX NUMBER 603-271-2700**

**Mailing address will be: NH DEPT OF ADMINISTRATIVE SVC  
BUREAU OF PURCHASE AND PROPERTY  
25 CAPITOL STREET, STATE HOUSE ANNEX, ROOM 102  
CONCORD, NH 03301**

**Bid #461 , opening @ 1:30 pm on 6/21/2004**

**BID RESULTS:**

Bid results will not be given over the telephone. Bid results will be mailed to you if you include a self-addressed envelope with the correct amount of postage on it. Bid results may also be viewed on our web site at:

<http://www.admin.state.nh.us/purchasing/bids.asp>

## Application Data

### Cooling (Standard Radiator)

Cooling System	60 Hz
Ambient temperature °C (°F)	50 (122)
Engine jacket water capacity, L (gal.)	3.3 (0.9)
Engine jacket water flow, Lpm (gpm)	64.4 (17.0)
Radiator system capacity, including engine, L (gal.)	11.5 (3.0)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	31.5 (1791)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	406 (16.0)
Fan, kWm (HP)	1.8 (2.5)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	0.13 (0.5)

### Operation Requirements

Air Requirements	60 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)*	142 (5000)
Combustion air, m <sup>3</sup> /min. (cfm)	1.8 (65)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	6.5 (369)
Generator, kW (Btu/min.)	3.3 (187)

\* Air density = 1.20 kg/m<sup>3</sup> or 0.075 lbm/ft<sup>3</sup>

Fuel Consumption	60 Hz
Natural Gas, m <sup>3</sup> /hr. (cfh) at % load	
100%	15.5 (548)
75%	12.8 (450)
50%	9.9 (350)
25%	7.6 (269)
LP Gas, m <sup>3</sup> /hr. (cfh) at % load	
100%	6.2 (219)
75%	5.1 (180)
50%	4.0 (141)
25%	3.0 (106)

## Controller



### Advanced Digital Control Features

- Compact controller
- Integrally mounted to the generator set
- LED display:
  - Runtime hours
  - Crank cycle status
  - Diagnostics
  - Application software version
- LED display communicates faults:
  - Auxiliary fault
  - High battery voltage
  - High engine temperature
  - Low battery voltage
  - Low oil pressure
  - Overcrank safety
  - Overspeed
  - Overfrequency
  - Overvoltage
  - Underfrequency
  - Undervoltage
- Membrane keypad for configuration and adjustment
  - Password-protected user access to menus
  - Voltage, gain, and speed adjustment
  - System configuration: system voltage, phase, and frequency settings, battery voltage, and generator set model
- Master switch: Run/Off-Reset/Auto
- Remote two-wire start/stop capability
- Superior electronics protection from corrosion and vibration
  - Potted electronics
  - Sealed connections
- Digital voltage regulation:  $\pm 1.5\%$  RMS no-load to full-load
- Automatic start with programmed cranking cycle

## Alternator Specifications

Specifications	Generator
Manufacturer	Kohler
Type	2-Pole, Brush Type
Leads: quantity, type	4 or 12, Reconnectable
Voltage regulator	Digital
Insulation:	NEMA MG1-1.66
Material	Class H
Temperature rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load RMS	±1.5%
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
120/240 V, 1 ph 2F7 (4 lead)	42
480 or 240 V, 3 ph 2G7 (12 lead)	69

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- The generator set complies with ISO 8528-5 requirements for transient performance.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the generator field.
- Self-ventilated and drip-proof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Digital voltage regulator with ±1.5% no-load to full-load regulation.

## Application Data

### Engine

Engine Specifications	60 Hz
Manufacturer	GM
Engine: model, type	GM 1.6L OHC
Cylinder arrangement	4, In-line
Displacement, L (cu. in.)	1.6 (98)
Bore and stroke, mm (in.)	79 (3.11) x 81.5 (3.21)
Compression ratio	9.4:1
Piston speed, m/min. (ft./min.)	586 (1925)
Main bearings: quantity, type	5, Replaceable Inserts
Rated rpm	3600
Max. power at rated rpm, kWm (BHP)	37.2 (50)
Cylinder head material	Aluminum
Crankshaft material	Cast Iron
Valve (exhaust) material	High Alloy Steel
Governor type	Electronic
Frequency regulation, no load to full load	Isochronous
Frequency regulation, steady state	±0.25%
Air cleaner type, all models	Dry

### Exhaust

Exhaust System	60 Hz
Exhaust flow at rated kW, m³/min. (cfm)	8.35 (295)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	760 (1400)
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)
Exhaust outlet size at engine hookup, mm (in.)	50.8 (2.0)

### Engine Electrical

Engine Electrical System	60 Hz
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	70
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	600
Battery voltage (DC)	12

### Fuel

Fuel System	60 Hz
Fuel type	LP Gas or Natural Gas
Fuel supply inlet	3/4-14 NPT
Fuel supply pressure oz./in.² (in. H₂O)	4-6 (7-11)

### Lubrication

Lubricating System	60 Hz
Type	Full Pressure
Oil pan capacity, L (qt.)	3.2 (3.4)
Oil pan capacity with filter, L (qt.)	3.5 (3.7)
Oil filter: quantity, type	1, Cartridge

# Model: 30RYG

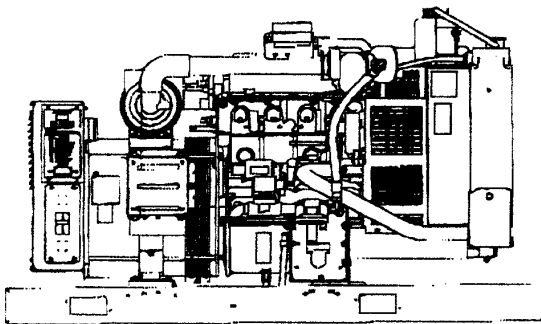
# KOHLER POWER SYSTEMS

# Gas

**99001**  
**POWER SYSTEMS**  
 NATIONALLY REGISTERED

## Ratings Range

		60 Hz
Standby:	kW	19.0-30.0
	kVA	23.7-33.6



## Standard Features

- Kohler Co. provides one source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The generator set accepts rated load in one step.
- UL 2200 listing and UL listing to Canadian safety standards available (2F7 generator).
- A one-year limited warranty covers all systems and components. A two-year extended warranty is also available.
- Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
- Engine features:
  - Natural gas or LP fueled
  - Electronic engine controls for optimized fuel and spark performance
  - Four cylinder, four cycle engine
  - An electronic, isochronous governor for precise frequency regulation
  - High silicone content pistons for improved durability
- ADC 2100 digital controller features:
  - LED display provides diagnostic capability
  - Digital voltage regulator with  $\pm 1.5\%$  no-load to full-load regulation
  - Superior electronics protection from corrosion and vibration
  - See more controller features inside

## Generator Ratings

Generator	Voltage	Ph	Hz	Natural Gas Rating		LP Rating	
				kW/kVA	Amps	kW/kVA	Amps
2F5	120/240	1	60	24.0/24.0	100	24.0/24.0	100
	120/208	3	60	19.0/23.7	66	19.0/23.7	66
	120/240	3	60	19.0/23.7	57	19.0/23.7	57
2G5	127/220	3	60	19.0/23.7	62	19.0/23.7	62
	139/240	3	60	20.0/24.9	60	20.0/24.9	60
	277/480	3	60	20.0/24.9	30	20.0/24.9	30
2F7	120/240	1	60	27.0/27.0	112	30.0/30.0	125
	120/208	3	60	26.0/32.4	90	26.0/32.4	90
	120/240	3	60	26.0/32.4	78	26.0/32.4	78
2G7	127/220	3	60	26.0/32.4	85	26.0/32.4	85
	139/240	3	60	27.0/33.6	81	27.0/33.6	81
	277/480	3	60	27.0/33.6	41	27.0/33.6	41

**RATINGS:** All three-phase units are rated at 0.8 power factor. **Standby Ratings:** Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO 3046/1, BS 5514, AS 2789, and DIN 6271. **Prime Power Ratings:** Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. Obtain the technical information bulletin (TIB 101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. **NOTE:** Order separate generator set specs for 60 or 60 Hz as this model cannot change frequency. **GENERAL GUIDELINES FOR DERATION:** Altitude: Derate 1.5% per 305 m (1000 ft) elevation above 1000 m (3800 ft). Temperature: Derate 0.4% per 5.5°C (10°F) temperature above 25°C (77°F).

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